

# MECHANICAL ENGINEERING

The Monthly Journal Published by The American Society of Mechanical Engineers  
at Easton, Pa. General Offices at 29 West Thirty-ninth Street, New York

Volume 42

November 1920

Number 11

## A.S.M.E. to Celebrate its Fortieth Anniversary on November 5

Special Meeting to be Held in New York—Forty Simultaneous Meetings in Forty Cities—Interesting  
History of First Meeting in 1880

JUST as it is fitting for us to take stock at stated periods during the business year, so it is well for an organization to pause in its strenuous activities of development and to reflect upon the progress made and to celebrate its achievements. So on November 5, 1920, it is proposed by a series of simultaneous meetings throughout the country and a special meeting in New York to celebrate the Fortieth Anniversary of the first meeting of the A.S.M.E. which was held on November 4-5, 1880, in the theater of the Union League Club, then in Madison Square at the corner of East 26th Street, New York City.

### SIMULTANEOUS SECTION MEETINGS

The thirty-eight sections are planning more or less uniform programs which, however, will be sufficiently flexible to permit any special features which may be desired. Certain of the Sections will have very comprehensive programs, including technical papers, an excursion and a banquet. The designation of a Council member, or a former officer of the Society, to attend each meeting will knit the various groups together in a unity of thought and purpose which cannot fail to stimulate in the heart of every member of the A.S.M.E. an appreciation both of the power and influence of the Society in the great engineering movements of the day.

### A SPECIAL MEETING IN NEW YORK

The interest in this Fortieth Anniversary has been so general that a petition has been signed by a number of members and approved by President Miller for a special commemoration meeting of the Society as a whole, to be held in New York on November 5, that the occasion may be properly celebrated at Society headquarters. This will be the first special meeting to have been held since the one in San Francisco in 1915 at the time of the Panama-Pacific Exposition. It is expected to develop this meeting in a unique way so as to fit in with the simultaneous Section meetings in other parts of the country on the same evening. An effort is being made to provide a spectacular demonstration through the use of the loud-speaking telephone, or radiophone, whereby the speeches in New York may be heard simultaneously by a number of the Sections' audiences. So far, arrangements have been completed to tie in by this means the meetings in New England and Eastern New York; but because of the commercial requirements for such service it is doubtful if the demonstration can be made at a greater distance. Even under these restricted limits, however, this feature will represent the highest attainment in radiophone service which has been achieved to date.

### SPECIAL ADVISORY COMMITTEE APPOINTED

A special Advisory Committee has been appointed by the Presi-

dent to take charge of the arrangements of these meetings, which are under the joint jurisdiction of the Committee on Meetings and Program and Committee on Local Sections. The personnel of this Committee is Henry R. Towne, senior living Past-President, Major William H. Wiley, who was present at the Organization Meeting and Preliminary Meeting—the first meeting which we are to celebrate—and who, by a strange coincidence, will on

### Special Meeting of the Society

A special meeting to celebrate our Fortieth Birthday will be held at Society Headquarters November 5, 1920. The call for this meeting is printed below and in accordance with the Constitution of the Society has been signed by the required number of members and approved by the President.

NEW YORK, October 1, 1920.

MR. FRED J. MILLER, *President*  
THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS.  
*Dear Sir:*

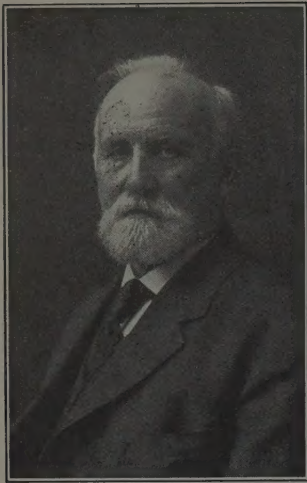
We, the undersigned voting members of the Society, do hereby request in accordance with Article 41 of the Constitution that you call a special meeting of the Society to be held in New York at 8.00 p.m., Friday, November 5, 1920, for the purpose of celebrating the 40th Anniversary of the first meeting of The American Society of Mechanical Engineers.

Respectfully,

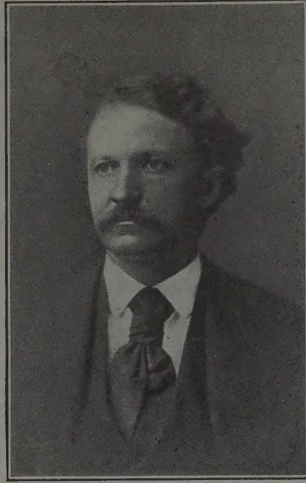
S. N. Castle	C. Harold Berry	D. G. Baker
Wm. E. Bullock	C. B. LePage	C. V. Kerr
L. P. Alford	J. A. Seymour	H. V. R. Scheel
L. G. French	G. K. Parsons	W. W. Macon
C. M. Sames	W. S. Finlay, Jr.	F. J. Winters, Jr.
J. E. Vera	O. W. Harvey	W. H. Taylor
Ernest Hartford	E. A. Stillman	Claude Hartford
O. F. Allen	W. E. Symons	W. J. Glendenning
E. L. Sherwood	C. A. Adams	W. H. Kavanaugh
C. W. Obert	J. H. Deppeler	R. H. Fernald
Chas. W. Burrows	A. S. Kinsey	F. T. Chapman
W. Herman Greul	Calvin W. Rice	W. H. Boehm
B. V. Swenson	W. M. McFarland	A. D. Blake
A. M. Mattice	G. A. Trube	S. D. Collett
Francis H. Richards	P. M. Lincoln	J. H. Lawrence
W. W. Ricker	Geo. A. Orrok	H. C. Meyer, Jr.
R. J. S. Pigott	W. C. Brinton	J. W. Nelson
G. J. Foran		

Approved,  
FRED J. MILLER, *President*.

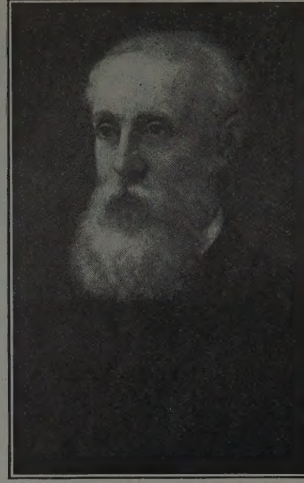
November 5 celebrate the 36th anniversary of his first election as Treasurer, W. Herman Greul, Frank T. Chapman, Harry A. Hoff and L. B. McMillan.



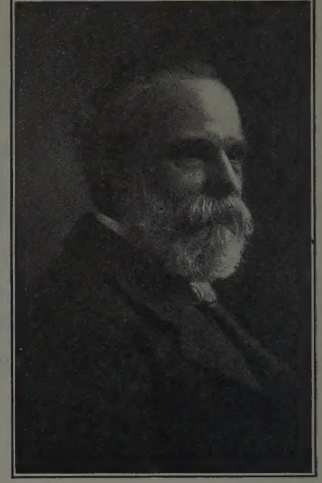
JOHN E. SWEET



ALEXANDER L. HOLLEY



HENRY R. WORTHINGTON



ROBERT H. THURSTON

FOUR OF THE DISTINGUISHED FOUNDERS OF THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS

## A Brief Account of the Beginning of The A.S.M.E. and Some Notes on Its First Annual Meeting, November 4 and 5, 1880

"THE concept of an American Society of Mechanical Engineers took shape in the winter of 1879-1880." In these words Dr. Frederic Remsen Hutton begins his history of the A.S.M.E. In that year, he tells us, the American Society of Civil Engineers and the American Institute of Mining Engineers were both in existence, and yet, strange to say, the "engineers of production and of the factory and power plant" had no means of meeting together for an exchange of views on the problems of their particular field. Furthermore the feeling that a society of mechanical engineers should be formed was shared by many, for the Centennial Exposition of 1876 had aroused a national interest in matters of a mechanical nature and the period itself, coming just after the Civil War, was witnessing great industrial development and growth.

And so it was but natural that Prof. John E. Sweet, who had just resigned as head of the shop department of Cornell University to begin the manufacture of engines of his own design, and Mr. Jackson Bailey, then editor of *American Machinist*, should begin a correspondence "looking to the formation of a national society to be devoted to the advancement of mechanical engineering."

### THE PRELIMINARY MEETING OF FEBRUARY 16, 1880

Mr. Bailey early suggested that Professor Sweet prepare a list of persons to whom an invitation should be sent asking them to take part in a meeting at which plans for the creation of such a society might be discussed. Professor Sweet, however, hesitated to call such a meeting upon his own initiative and so he first consulted Mr. Alexander L. Holley and Prof. Robert H. Thurston in regard to the plan. They at once approved and thereupon Professor Sweet issued the call as originally suggested. The date set was February 16, 1880, and on that day a total of 30 persons gathered in the office of the *American Machinist*, then located at 96 Fulton Street, New York City. Professor Sweet called this all-important gathering to order and Mr. Holley was nominated chairman. What followed is perhaps best told by Dr. Hutton in his history of the Society, in which we read:

Mr. Holley made an opening address on The Field of Mechanical Engineering, covering his conception of it and the type of man from which such a society, if organized, might draw its membership. The engineer of fixed works, usually called the civil engineer, he said, has his structures built for him by mechanical means. The military engineer has his fort or gun carriage made by machines. In bridge building the shop is the economic factor, in mining the work of mining ore is done by the machine drill, the steam hoist, the power transportation system. In metallurgy and the rolling mill, in the foundry and the forge, there are thousands of special machines and tools at once presented to the mind. In railways and in

transportation by water the structures and the working are all in the field of mechanics and dynamics, and the railway master mechanics are one of the largest defined classes of mechanical engineers.

In agriculture, architecture, and in the industries in general, the textile mill, the paper mill and the factory of all kinds, the motive power and most of the equipment are the creative and the operative burden of the mechanical engineer. Hence, the Society proposed should find no lack of membership material.

Mr. Holley also reviewed the advantages and character of such an organization as proposed, dividing them as follows:

- (a) The collection and diffusion of knowledge.
- (b) The advantages from personal acquaintance among the members.
- (c) The educational value of the habit of writing papers and of debate upon them.
- (d) The significance of the endorsement of a high quality of elected membership.

Finally he referred to the tendency of mechanical engineering in America to combine the professional scientifically trained mind with the qualities of leadership in the processes of production, so that the engineer is often also a business man. Hence, the necessity was plainly present to his mind, that membership should be sought for two classes; for the professional man engaged in an office practice, either by himself or in the employ of an industrial corporation; and for the executive type of man whose compensation was for his talents and success on the business side of industry. The Junior membership for the young man in the shop and for the young graduate of engineering schools was obviously necessary. He urged the policy of a membership vote on candidates, the significance of representative engineers for office in the new organization, and the advisability of frequent meetings. The value of the first papers as setting a standard of excellence for the future and securing interest for the Society and its work was his closing word.

There were no published minutes of this preliminary meeting, but from manuscripts and other sources there is a record of a discussion as to the name to be given to the new body. Professor Trowbridge, familiar with the practice at that time in Yale University, urged the term "dynamical" in lieu of "mechanical" as the qualifying adjective for the proposed type of engineer, on the ground that the higher field of such persons was the generation and control of power. The inevitable confusion with the name dynamo as a machine for converting mechanical energy into electrical was argued against this suggestion, and finally, at the suggestion of Mr. Chas. W. Copeland, the meeting accepted the name, American Society of Mechanical Engineers, following the example set by the American Society of Civil Engineers, already well and favorably known.

This meeting thus practically decided that there *was to be* such a society; it only remained to formulate the details.

The first step was to appoint a committee to draw up the basis of organization and formulate its rules; this was done by making Messrs. Henry R. Worthington, Eckley B. Coxe, Jackson Bailey, Genl. Quincy A. Gillmore, Prof. W. P. Trowbridge, M. N. Forney, and A. L. Holley such a committee. A committee to nominate officers under such organization was appointed also, consisting of Messrs. A. L. Holley, John L. Sweet, E. D. Leavitt, C. T. Porter and H. R. Worthington. An adjournment was then taken to April 7 to hear the reports of these committees, to act thereon and to effect a permanent organization thereunder.

## THE A.S.M.E. IS ORGANIZED APRIL 7, 1880

In accordance with the events as chronicled above, the first meeting of the Society, or rather its organization meeting, was therefore held on April 7, 1880. Dr. Henry Morton, then president of Stevens Institute of Technology, at Hoboken, N. J., had coöperated with Mr. Holley in some of the preliminary matters of organization, and upon his invitation this first meeting of the Society was called to order in the large assembly hall of the Institute. Mr. Holley as chairman of the preliminary meeting had issued the call but he was kept away by illness and in his stead Mr. Worthington took the chair. The roll call showed 80 present. What occurred at this initial gathering of the mechanical engineers of America has been faithfully recorded, and we again quote from Dr. Hutton's entertaining history:

In his opening address, Mr. Worthington reported two decisions reached in the conference which had preceded the meeting. The first was that a

be reported as recommended by the other committee soon to be heard from? The question was discussed back and forth, until Mr. W. F. Durfee arose. He was a distinguished student of antiquarian Americana, and stated that the method followed by pioneer pilgrims could be presented in the following syllogism:

**Major Premise:** The highest authority states: "The earth is the Lord's and is the inheritance of the Saints."

**Minor Premise:** We are the Saints!

**Conclusion:** There could be no question to whom the earth belonged.

Amid much laughter the meeting decided by a rising vote that all who were then present and those who had attended or sent letters to the preliminary meeting and who subsequently qualified by paying the required initiation fee of \$15, were proposed by the Committee on Organization as charter members and were entitled to vote. The Rules were thereupon adopted, and made the organic law of the new Society.

## THE FIRST OFFICERS OF THE SOCIETY

The Committee to nominate officers for the first year then presented the following ticket, and there being no objection raised,

AMERICAN SOCIETY OF MECHANICAL ENGINEERS	
TREASURER'S OFFICE, 86 FULTON STREET	
New York, 1880	
Members will please sign their names.	
Present Nov 4 <sup>th</sup> 1880 (P.M.)	
1 R. N. Thurnton	20 J. White
2 J. C. Barker	21 Chas. A. Hague
3 John E. Sweet	22 Joshua Rose
4 Kelly B. Gore	23 Elgin
5 W. A. Lee	24 J. W. Robinson
6 E. S. Gault	25 George B. Bony
7 F. R. Reutter	26 E. B. Bunsell, Jr.
8 Harry Laker	27 Chas. Sherry
9 A. B. Woodruff	28 Wm. H. Kelly
10 Chas. J. Butler	29 E. B. Mallory
11 W. Barnett Le Van	30 Alfred R. Wolf
12 Washington Jones	31 Wm. H. Chapman
13 Henry B. Worthington	32 W. C. Trowbridge
14 W. C. Newton	33 C. Gibson
15 Aug. A. Gaudin	34 J. H. Dupper
16 W. H. Morton	35 Charles C. Hawk
17 E. H. Brown Jr.	36 Chas. E. Emery
18 Geo. R. Dickinson	37 M. N. Forney
	38 R. H. Soule

AMERICAN SOCIETY OF MECHANICAL ENGINEERS	
TREASURER'S OFFICE, 86 FULTON STREET	
New York, 1880	
39 John P. Allen	61 John L. Lee
40 Geo. Sherry	62 S. B. Whiting
41 J. H. Robinson	63 Moses C. Miller
42 J. H. Lynd	64 Saml. J. Weston
43 John G. Lott	65 R. L. Evers
44 J. H. B. Thoms	66 Chas. J. Thompson
45 J. H. B. Thoms	67 Chas. H. Woodbury
46 Jackson Bailey	68 W. E. Ward
47 W. H. Odell	69 Stephen W. Baldwin
48 S. W. Powell	70 Wm. Offenberg
49 Henry Parsons	71 Wm. H. Hoffmann
50 Jacob Nicols	72 A. Laborer
51 J. H. Hargreaves	73 Allan Stirling
52 Wm. Lee Church	74 Horace B. Miller
53 J. H. B. Thoms	75 Lycurgus B. Moore
54 J. H. B. Thoms	76 J. H. Holloway
55 Chas. C. H. Thoms	77 Charles J. Deane
56 A. W. Colwell	78 Alex. Spedon
57 Chas. C. H. Thoms	79 J. H. Holloway
58 J. H. B. Thoms	80 Wm. Main
59 J. H. B. Thoms	81 John J. Webb
60 Thomas Whitehead	82 W. H. Thoms

REGISTER OF THE FIRST ANNUAL MEETING OF THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS, HELD AT THE "TURF CLUB" (NOW) THE "UNIVERSITY CLUB", NEW YORK CITY, NOVEMBER 4 AND 5, 1880

policy of broad interpretation of the troublesome problem of eligibility to membership had been settled by ruling against a specific wording of qualifications, leaving the Council free when acting as a membership committee to settle each case by itself. The Society did not create a Membership Committee for many years (1904), but the Council had one for its own convenience long before the Constitution recognized it and fixed its method of procedure.

The other policy was that of recognizing that the governing Council of the Society should be the persons who would know best whether the Secretary of the Society when he was found, was a person whose methods were building up the Society or blocking its progress. . . . It was best, therefore, to take the office of the Secretary out of the Society politics, and make him the appointee of the elected officers who form the Council. . . .

The Committee on By-Laws then presented its report through Mr. M. N. Forney. There seems little doubt that these rules were drafted by Mr. Holley, and sent for criticism to his colleagues, and found acceptable by them. The ideas embodied the successful features of method in use by the then existing engineering societies, with the additions and changes to meet the special group of conditions. The headings were: (a) objects, (b) membership, (c) procedure of election, (d) fees and dues, (e) officers of the Society, (f) procedure of election of officers, (g) meetings, (h) papers, (i) amendments.

At once an interesting question arose in this gathering of eighty men. Who were qualified to vote on the adoption of the proposed report and its rules for conduct of the Society, and who could vote and elect the officers to

the meeting adjourned, referring to the officers the details of arranging for the first Annual Meeting in the fall.

## PRESIDENT

ROBERT H. THURSTON  
Stevens Institute of Technology, Hoboken, N. J.

## VICE-PRESIDENTS

HENRY R. WORTHINGTON	New York
COLEMAN SELLERS	Philadelphia, Pa.
ECKLEY B. COXE	Drifton, Pa.
QUINCY A. GILLMORE	U. S. Army
WM. H. SHOCK	U. S. Navy
ALEXANDER L. HOLLEY	New York

## MANAGERS

WM. P. TROWBRIDGE	New York
THEO. N. ELY	Altoona, Pa.
JOHN C. HOADLEY	Lawrence, Mass.
WASHINGTON JONES	Philadelphia, Pa.
WM. B. COGSWELL	Syracuse, N. Y.
FRANCIS A. PRATT	Hartford, Conn.
CHARLES B. RICHARDS	Hartford, Conn.
S. B. WHITING	Pottsville, Pa.

## TREASURER

LYCURGUS B. MOORE	New York
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## THE FIRST ANNUAL MEETING, NOVEMBER 4 AND 5, 1880

The new Society was at once successful and during the interval between the organization meeting of April 7 and November 4 more than doubled its membership, for the first Transactions record the fact that when this first Annual Meeting was held in what was then the theater of the Union League Club at the corner of Madison Avenue and 26th Street, New York City, the Society consisted of 163 Members, 17 Associates, and 9 Juniors, a total of 189. Of these 84 were present at the first Annual Meeting and 15 of them participated in the presentation of engineering papers.

It is interesting to note the subjects chosen by the authors of these papers as they indicate to some extent the field of mechanical engineering at that time. As given in Volume 1 of the Transactions, the titles of the papers and their authors were as follows:

The Metric System.....	Coleman Sellers
Regenerating Metallurgical Furnaces.....	Jacob Reese
Putting a New Crank-Pin in the Engine of the S. S. Knickerbocker.....	Lewis Johnson
Measurement of the Friction of Lubricating Oils.....	C. J. H. Woodbury
Strength in Machine Tools.....	Charles T. Porter
Standard Sizes of Screw Threads.....	G. R. Stetson
An Adaptation of the Bessemer Plant to the Basic Process.....	Alexander L. Holley
Friction as a Factor in Motive Power Expenses.....	John E. Sweet
High Ratios of Expansion and Distribution of Unequal Pressures in Single and Compound Engines.....	J. C. Hoadley
The Value of the Study of the Mechanical Theory of Heat.....	A. R. Wolf
Efficiency of the Crank.....	S. W. Robinson
Mechanical Correctness.....	Charles A. Hague
Packing for Piston Rods and Valve Stems.....	L. F. Lyne
Cushion Adjustment in Engines.....	S. W. Robinson
On Practical Methods for Greater Economy of Fuel in the Steam Engine.....	Allan Stirling

President Thurston called this first meeting to order at 2 p.m. on November 4, 1880. His inaugural address dealt with the objects of the new Society, and the methods which must be followed if it was to accomplish its task, and occupy its proper place in the rapidly expanding science and practice of engineering. It is significant that Professor Thurston especially urged and outlined as the larger word of the Society participation in the field of social economy rather than advancement of the individual interests of its members.

There was but little business to come before this initial gathering of American mechanical engineers. It was first agreed that Mr. Lycurgus B. Moore, Treasurer of the Society, should also act as Secretary until such time as the Council might make a permanent appointment, and resolutions were next offered and passed to the effect "that the Council be authorized to open the ballots for members proposed at the first meeting, and to declare the elections of such as are passed according to the rules of the Society."

Reports were then submitted by Mr. Moore as acting Secretary and Treasurer and both were duly approved. Mr. Holley next offered a resolution authorizing the President to appoint standing committees (five members each, two to be members of the Council) on Rooms and Conversation; and Arrangements for Regular Meetings. This resolution was promptly passed and President Thurston announced that appointments would be made before the meeting adjourned. The Secretary then read the order in which the papers would be presented.

## Frank B. Gilbreth, Now LL.D.

Members of The American Society of Mechanical Engineers will be glad to know that at the last commencement at the University of Maine, Frank B. Gilbreth was granted the degree of LL.D. for his work on waste elimination, motion study and management, and researches in the subject of fatigue, particularly the elimination of unnecessary fatigue through motion study, which is now recognized throughout the world. In conferring the degree, President Aley laid great stress on Dr. Gilbreth's inventions in civil engineering, as well as in scientific management, also on the fact that Dr. Gilbreth applied motion study to the reeducation of the handicapped. Dr. Gilbreth is an Honorary Member of the Society for the Promotion of Occupational Therapy, of which society Dr. Jules Amar was made an Honorary Member at the same time.

## The Secretary's Letter

THE professional engineer has an unrivaled opportunity to serve the world at this crisis.

It is by the invention and application of labor-saving devices that we increase production. At the same time, by the introduction of new devices and by better administration the engineer can make labor more efficient. It has been claimed that the introduction of automatic machinery and the specialization of the worker dull the interest—that whereas formerly the mechanic constructed the entire article, today he is confined to the repetition of a single piece and cannot picture in his imagination the completed article, therefore, becoming merely a machine, or a part of a machine and supplying only the eyes or hands to a mechanism which inventive genius has not yet been able to add.

I believe this difficulty, which of course is a difficulty if allowed to remain uncorrected, will be a serious handicap to the introduction of specialized apparatus. The proper way to meet it, however, is by the introduction of charts showing the rate of progress on a particular machine or collection of machines, or process, so that the operator may compare, from hour to hour or from day to day, the results of his work. This will instill in him the desire to maintain his record of achievement. Along with such charts for the various individual processes should be shown the effect of poor workmanship at each step on the final product, in order to establish in each individual a sense of obligation to his fellow-workers.

First, we should now put emphasis on the increased production of necessities;

Second, on the development of transportation, and

Third, as an accompanying activity, increased sources of power.

In Washington the Water Power League of America has just met to discuss the best means of coöperation between the State and Federal Governments and has planned for the national and coordinate development of all unused water resources of the United States. Prof. George F. Swain, member of this Society and president of the Water Power League, was in the chair.

Our Professional Section on Transportation has planned a remarkable session at the Annual Meeting and the keynote session of that meeting will be a series of addresses by the leaders of the United States in transportation. The failure adequately to maintain the railroads during the war period has developed to an extraordinary degree the motor truck, and our sister society, the Society of Automotive Engineers, is commendably active in giving attention to this phase of transportation.

As to the matter of Fuels—our Professional Section on that subject is also to hold an important session at the Annual Meeting.

With these three important phases of the solution of the world's difficulties, it would seem as if every member of the Society might be included and all have a part to a satisfying degree.

CALVIN W. RICE,  
Secretary.

## Membership Elects New National Officers

Under the provisions of the new By-Laws, the Secretary announced on October 1 the result of the letter ballot of the Society or the national officers for the year 1921, as follows:

### For President:

EDWIN S. CARMAN

### For Vice-Presidents:

LEON P. ALFORD

JOHN L. HARRINGTON

ROBERT B. WOLF

### For Managers:

LOUIS C. NORDMEYER

HENRY M. NORRIS

CARL C. THOMAS

### For Treasurer:

WILLIAM H. WILEY

The following telegram was sent to the successful candidates by Mr. Rice:

Pleased to announce your unanimous election for 1921. Accept our good wishes, also our personal congratulations. Society has wonderful opportunity for good at this time of readjustment of the world, and you in turn have both the responsibility as well as the opportunity to lead in the consummation of the highest ambition of the engineering profession.

CALVIN W. RICE

The inauguration of the new officers will take place on the open-

ing night of the Annual Meeting, December 7, and their terms of office will begin on the adjournment of the Annual Meeting in December, in accordance with the usual custom. The plan of announcing the election two months in advance, carried into effect this year for the first time, was adopted so that the new officers might familiarize themselves with the extensive activities of the Society well in advance of their assuming responsibility for its government. Biographical sketches of the officers were sent to the membership, accompanying the blanks for the letter ballot.

## Tenth Anniversary of Condensed Catalogues

Is it not gratifying, when a pause in the daily routine permits, to review the efforts of years and to find in each successive year larger growth and greater development? The Society's publication Condensed Catalogues of Mechanical Equipment shows just such a pleasing growth and development, demonstrating its usefulness and value in its field of service. The tenth annual (1920) volume, now being distributed to the membership, is more comprehensive than ever, embodying features that facilitate its use and enhance its value as a reference book.

There are 745 catalogue pages containing the condensed catalogue data of 572 firms. These data are all presented in a uniform manner and includes descriptions of over 1500 pieces of apparatus, instruments, materials and the like—illustrated by over 2000 engravings. The indexing and classifying is thoroughly done so that the particular data sought can be instantly found.

The Mechanical Equipment Directory pages contain the names and addresses of over 4000 firms under 3000 classifications of equipment. The names and addresses of over 800 consulting engineers under 500 classifications are to be found in the Consulting Engineers' Directory.

The volume may be purchased by non-members at \$4.00 a copy. Extra copies for members at \$3.00 each.

## President-Elect E. S. Carman Carries Greetings to the Canadian Engineers

The cordial relations existing between the Engineering Institute of Canada and the various engineering societies of the United States was again emphasized at a meeting of the Institute held at Niagara Falls, in September, by the attendance of Mr. E. S. Carman, President-Elect of The American Society of Mechanical Engineers, who conveyed to the members of the Institute the congratulations of engineers on this side of the border upon the successful conduct of the meeting and the important engineering developments which were to be discussed. He said that he represented practically thirteen thousand mechanical engineers of the United States, who are at all times prepared to greet the Canadian engineers as brothers.

This meeting was devoted mainly to papers relating to power development at Niagara Falls and to transportation on The St. Lawrence River and through the Welland Ship Canal. The papers presented were the following: The St. Lawrence Route and the Welland Ship Canal, by Alexander J. Grant; Design of The Queenston-Chippawa Power Canal, by T. H. Hogg; Hydraulic Installation of The Queenston-Chippawa Power Development, by M. V. Sauer; Electrical Features of The Queenston-Chippawa Power Development, by E. T. J. Brandon; General and Economic Features of The Queenston-Chippawa Power Development, by H. G. Aeres; Demonstration of The Gibson Method of Measuring The Flow of Water in Closed Conduits for Determining The Efficiency of Hydraulic Turbines, by N. R. Gibson.

An interesting comment was made by one of the speakers, T. H. Hogg, assistant hydraulic engineer of the Hydro-Electric Power Commission of Ontario, who expressed his personal opinion that at some time in the future all of the water diverted from Niagara Falls for hydroelectric purposes would be used at Queenston and Lewiston, and that the Ontario Power Company's power plant located in the gorge would in that event have to be practically abandoned.

## Aeronautic Section Now Under Way

At the call of Howard E. Coffin, member of the Special Committee on Professional Sections representing Aeronautics, members of the Society met at the Detroit Athletic Club on September 27 and voted to petition the Council for the formation of a Professional Section on Aeronautics.

The meeting was a small one due to inclement weather and also probably due to the wide distribution of the 201 members who have registered for the Section. A few of those present were from the Detroit Local Section, to all of whose members an invitation had been sent.

In opening the meeting, Mr. Coffin gave an intimate picture of the development of aircraft in this country during the war; of the status of the work of the various organizations at present interested in aeronautics and of the relations between the aircraft manufacturers and these organizations and the Government and foreign countries. He gave his opinion of the place an Aeronautic Section of our Society would have in the field and considered that such a section would be able to contribute to a good general result in respect to legislation.

The Society of Automotive Engineers, which has done more in the field of aeronautic technology in this country than any other organization, was represented by its general manager, Coker F. Clarkson, who promised the support of his organization to our Section. Mr. Clarkson called attention to the large number of men interested in this subject who were members of the two organizations, and he hoped that the A.S.M.E., in appointing committees, would give careful consideration to avoiding duplication of effort and to overloading men on whom the S.A.E. was already calling heavily. He was assured that this would be watched and that certainly our Society would not take on any work which the S.A.E. is doing. Our program would be devoted more to periodical reviews of the aircraft situation issued for the benefit of our whole membership and to providing an organization which would be available for service to the industry if required.

Following the vote on the petition an Organizing Committee, consisting of Burt D. Thompson, Victor R. Heftler and E. E. Aldrin, was appointed to prepare a letter ballot for the election of an Executive Committee of five to conduct the work of the Section.

Any members of the Society interested in this Section, but not yet registered, are invited to send in their names to the Secretary. There are no extra dues for any of these Professional Section activities. Non-members may also be registered as affiliates.

## Materials Handling Section Elects Officers

The Organizing Committee of the Materials Handling Section, F. E. Lister, N. J. Penning and H. E. Whitaker, has taken a letter ballot of the members registered in this Section, with the result that the following have been elected as the Executive Committee of the Section: Robert M. Gates, Chairman; Harold V. Coes, Vice-Chairman; F. A. Wardenberg, Nathan C. Johnson, and Kern Dodge.

Mr. Gates is engineer of the Lakewood Engineering Company and has just been transferred to the Philadelphia office of the company in the Widener Building. His professional work has been chiefly in connection with the design and manufacture of special cranes.

Mr. Coes has had a varied experience, including the manufacture of carbonic acid gas and acetylene gas; his specialty is now industrial engineering and ideal plant development, plant locations and rehabilitation of existing plants.

Mr. Wardenberg is directing engineer of the du Pont Powder Company, all power, water-supply and fire-protection matters being under his supervision.

Mr. Johnson, now a consulting concrete engineer, was formerly engineer with the Raymond Concrete Pile Company. His early work included research in the magnetic properties of iron and steel.

Mr. Dodge is well known in Philadelphia and was formerly associated with Mr. Charles Day. He was trained at the Link-Belt Company and has been for some years a consulting engineer on industrial power plants.

The greatest economic need of civilization today is the devising

of means and a more intelligent application of proper and co-ordinated methods whereby materials of one kind or another may be handled more swiftly and to better advantage.

Probably at no time in the world's history has there been so dire a need for the efficient interchange of products. Old isolations and boundaries have dissolved. Over half of the productive world has been engaged in destruction and there is now correspondingly imperative necessity for reconstruction both physically and morally.

Under this ever-increasing load, old systems of commodity interchange have broken down. Industrial and railroad congestion is almost intolerable and with these continued conditions have come mounting costs, until better, more efficient and more adequate systems must come into being if the cost differential that is now being reflected in the soaring prices of all goods is to be modified.

The burden of this necessity therefore makes it imperative that a professional section composed of those whose interests and whose expert knowledge bring this problem close to them, shall assume this work as its obligation to the technical fraternity and its contribution toward the solution of our national economic problem.

To accomplish this in the most beneficial way, the Section must be the common channel of intercourse between all technical and industrial organizations on the subject of mechanical handling of all materials. It must be the bureau of information—complete in its scope, specific in its knowledge of the physical and economic conditions and unbiased in its conclusions. This must be done by having special meetings on particular subjects, meetings jointly with other sections, other organizations or associations, by taking part in all local and national problems relating to the purpose of this Section.

### First Professional Section Papers Presented by Railroad Section

Among the new Professional Sections, the honor of presenting the first papers rests with the Railroad Section. This section had charge of the program at a joint meeting, on Friday evening, October 22, of the New York Section of the A.I.E.E. and the Metropolitan Section of the A.S.M.E. It was Railroad Electrification Night, and the remarks and the discussion were directed toward a determination of the relative advantages of modern steam and electric locomotives. Following is an outline of the program:

#### *Introductory Remarks:*

Frank J. Sprague, Consulting Engineer.

#### *Steam-Locomotive Advantages:*

John E. Muhlfeld, Railway & Industrial Engineers, Inc.

#### *Electric-Locomotive Advantages:*

A. H. Armstrong, Chairman Electrification Committee, G. E. Co.

F. H. Shepard, Director of Heavy Traction, Westinghouse Elec. & Mfg. Co.

#### *Discussion—Steam Point of View:*

W. L. Bean, Asst. Genl. Mech. Supt., N. Y. N. H. & H. R. R.

A. W. Gibbs, Chief Mechanical Engineer, Pennsylvania System.

F. H. Hardin, Chief Engr. of Motive Power, N. Y. C. R. R.

Wm. F. Kiesel, Jr., Mechanical Engineer, Pennsylvania R. R.

#### *Discussion—Electric Point of View:*

C. H. Quinn, Chief Electrical Engineer, Norfolk & Western Ry. Co.

A. L. Ralston, Mechanical Superintendent, N. Y. N. H. & H. R. R.

E. B. Katte, Chief Engr. Elec. Traction, N. Y. C. R. R.

#### *Closure of Discussion:*

George Gibbs Consulting Engineer, Pennsylvania R. R.

## DOINGS OF LOCAL SOCIETIES

### DETROIT ENGINEERING SOCIETY

Over 200 members of the Detroit Engineering Society attended the meeting on Friday evening, September 17, to hear Mr. Charles Evan Fowler, consulting engineer of New York and Detroit, lecture on Harbors and Harbor Bridges. Mr. Fowler not only discussed harbor facilities in general but made particular references to the proposed Detroit-Windsor Bridge. Beautiful lantern slides showing harbors all over the world, giving general views, plans and considerable details together with views of long-span bridges over harbors were interspersed with a considerable amount of engineering information in detail. Mr. Fowler had samples of the actual cables of the Manhattan and Brooklyn bridges placed in the lobby prior to the lecture, in which great interest was manifested. The Great Lakes-St. Lawrence Tidewater Congress held recently in Detroit, at which Mr. Fowler was one of the leading speakers, has made the subject of harbor improvements one of daily conversation in that city. The automobile industry put Detroit into the fourth place in population among cities in the United States, and there is no predicting where she will land if the new tidewater project becomes a reality.

Mr. Fowler is a member of the American Society of Civil Engineers and the Engineering Institute of Canada. His experience extending over thirty years has embraced the design and construction of bridges and harbors all over the North American Continent and he has also been associated in a number of large foreign harbor and bridge projects.

### PROVIDENCE ENGINEERING SOCIETY

We have heard much about the scrapping of the League of Nations but none of us, not even the radicals—Lenin and Trotsky—has suggested the scrapping of Sir Isaac Newton's theory of the laws of gravitation. This has been left to one Einstein, who claims that our former conceptions of gravitation are erroneous. Prof. C. L. E. Moore, of the Massachusetts Institute of Technology, presented Einstein's theory to the Providence Society at a meeting on September 28, giving the members present an opportunity to hear the European physicist's novel proposition, check upon their old ideas, and, if necessary, bring their knowledge up to date.

## Coming Section Meetings

#### *Atlanta.*

November 5. Celebration of the 40th Anniversary.

November 23. Subject: The Manufacture of Cotton Goods, by J. T. Wilke, of Atlanta, Ga.

#### *Chicago.*

November 5. At the Morrison Hotel. Subject: The Railroad Problem, by W. A. Finley, Pres. of the Chicago & Northwestern R. R.

#### *Connecticut.*

November 5. Annual meeting.

#### *Waterbury.*

November 5. In the Chase Co.'s Office Building, Waterbury, Conn.

#### *Mid-Continent.*

November 5. In the Chamber of Commerce Rooms, Tulsa, Okla.

#### *Philadelphia.*

November 5. Smoker at the Hotel Adelphia. Subject: The Manufacture of Tobacco, by Ben Lichty, Vice-President, The Eisenlohr Co., Philadelphia, Pa.

#### *Pittsburgh.*

November 5. At the Chatham Hotel.

#### *Metropolitan.*

November 26. Joint meeting with N. Y. Section A. I. E. E. in Engineers Building. Subject: Power Generation.

On October 5, President Miller made a trip to Providence to talk on an industrial-relations subject in connection with the joint meeting of the Providence Engineering Society and the Management Section of the A.S.M.E. It was the first joint meeting of the season, and was well attended and proved to be most profitable.

#### ENGINEERING SOCIETY OF AKRON

The Engineering Society of Akron will begin its activities of the season on October 29 with a lecture by Prof. F. O. Ellenwood, recently of Cornell University and now of the Goodyear Tire & Rubber Co. The Akron people have been very much alive and plan to set a pace on the 29th which will establish a splendid standard for the remainder of the season.

#### Recent Section Meetings

##### BALTIMORE:

October 5. The Industrial Uses of Gas, by Thompson King, Consolidated Gas Electric Light & Power Co.

##### BUFFALO:

October 26. Steam Railroad Electrification, by S. T. Dodd, General Electric Co.

##### CLEVELAND:

October 5. Relation to the Industry of the National Screw Thread Commission's Report, by E. C. Peck of the Cleveland Twist Drill Co.

##### COLORADO:

October 29. At the Metropole Hotel, Denver, Col.

##### COLUMBUS:

October. In the Club Rooms, Southern Hotel, Columbus, Ohio.

##### CONNECTICUT:

###### MERIDEN BRANCH:

October 12. Visited the plant of the Connecticut Telephone and Electric Co. Demonstration of Gasoline Motor Testing on the Dynamometer, by J. H. Bartholomew. Also an Oscillographic Demonstration of Ignition Coil Operation, by J. A. Terrell. Address on the Generation of Electrical Oscillations by Thermionic Tubes, by H. P. Donle, Chief Engineer.

###### WATERBURY:

October 2. At Stevenson, Conn. Inspection was made of the new hydroelectric plant of the Connecticut Light & Power Co.

##### HOUSTON:

October 14, 15, 16. Joint meeting with the Mid-Continent Section at Dallas, Texas.

##### METROPOLITAN:

October 22. Subject: Relative Advantages of Modern Steam and Electric Locomotives. For details see page 154.

##### MINNESOTA:

October 4. Water Treatment for Industrial and Municipal Purposes, by L. I. Birdsall, Supt. Minneapolis Filtration Plant.

##### PHILADELPHIA:

October 26. Bearings, by Albert Kingsbury, Consulting Engineer, Pittsburgh, Pa.

##### PROVIDENCE:

October 5. Management, by President Fred J. Miller.

##### ST. LOUIS:

September 24. Business meeting and discussion of Society's affairs and activities.

##### WASHINGTON STATE:

October 1. Thermal Conservation, by H. V. Carpenter of State College of Washington.

#### George Montefiore Foundation Contest

There have been received from L. Calmeau, Le Secrétaire général de l'Association des Ingénieurs électriciens sortis de l'Institut électrotechnique Montefiore, Liège, Belgium, the conditions of a contest to be held during 1921 for the best original work on scientific development and on the progress of technical applications of electricity in all branches, excepting popular applications. This contest was instituted by George Montefiore, the founder and late honorary president of the Institute Electrotechnique Montefiore, and is held under the auspices of the George Montefiore Foundation. The prize to be given to the winner of the contest is the Foundation George Montefiore, consisting of the interest on 150,000 francs at 3 per cent for three years.

## PERSONALS

ALFRED B. STRICKLER, who was formerly with The Prest-O-Lite Co., Indianapolis, Ind., is now located with the Service Engineering Division of Thomas A. Edison, Inc., Orange, N. J.

CARROLL D. BILLMYER has resigned his position as assistant engineer for the Atlas Portland Cement Co., Northampton, Pa., to reenter the teaching profession. He is located at the Georgia School of Technology, Atlanta, Ga., as assistant professor of mechanical drawing in the Coöperative Course.

FRANK R. ZIMMERMAN, formerly chief engineer with the National Iron Co., Duluth, Minn., is now secretary and treasurer of the Superior Iron Works Company, of Superior, Wis.

R. T. WOOD, formerly industrial engineer with The Standard Tool Company, is now connected with The Glidden Company, of Cleveland, Ohio.

C. W. OLSON has resigned his position as chief tool designer with the Continental Motors Corporation and is now connected with the National Steel Products Company of Detroit, Mich., as factory manager.

R. W. LEEFER, formerly with the General Electric Company in Cincinnati, Ohio, is now with The Management Engineering and Development Company, Dayton, Ohio.

F. H. THOMAS, formerly treasurer of the C. & G. Cooper Company, of Mt. Vernon, Ohio, was recently elected vice-president in charge of sales. G. S. RENTSCHLER, of Hamilton, Ohio, is a member of the Board of Directors of this company.

GRANT E. FURBUSH has severed his connection as chief draftsman, the Fafnir Bearing Company, New Britain, Conn., to become head of the drafting department at the State Trade School, New Britain.

The Tractor Division of the Taylor-Wharton Iron & Steel Company, known as the Tioga Manufacturing Company, the owner of all Tioga tractor patents, has been sold to the Steinmetz Electric Motor Car Corporation, of Baltimore, Md., a corporation recently organized to produce electric trucks under the patents of Dr. CHARLES P. STEINMETZ, chief consulting engineer of the General Electric Company, of Schenectady, N. Y. Tioga tractors will therefore be built hereafter at the just-completed Baltimore plant of the Steinmetz Company. A. M. LEONI, the designer of Tioga tractors, is going to Baltimore with the Steinmetz Company to be at the head of engineering and production.

H. J. MARKS, formerly sales engineer and district sales manager, New York, for the Badenhäusen Company, is now established in New York City as H. J. Marks & Co., Inc., sales engineers, who will act as New York agents for the Badenhäusen Company.

HUDSON H. BUBAR has resigned from the National Aniline & Chemical Company, Inc., to accept a position as maintenance and construction engineer with the Mutual Chemical Company of America, New York.

S. F. SHAW has resigned as superintendent of the American Smelting & Refining Company, Charcas, San Luis Province, Mexico, to accept a position as manager of the Cia. Mra. La Constanca, at Sierra Mojada, Coahuila, Mexico.

HOMER L. RANK, for the past sixteen years with the Mead-Morrison Manufacturing Company of Boston, New York, and Chicago, and for the past three years assistant manager of their New York office, is now associated with Richard Morton, engineering contractor, Baltimore, Md.

J. G. SCHABERT, formerly tool designer with the Yale & Towne Mfg. Company, Stamford, Conn., has been appointed instructor-in-charge of the Training School for Productive Employees of that company.

F. VAN BUREN CONNELL, formerly sales engineer for the Automatic Fuel Saving Company of Philadelphia, has accepted a similar position with the Whalen-Crosby Electric Company of Philadelphia.

PAUL J. KEIFER, formerly assistant professor of steam engineering, University of Illinois, is now associate professor of mechanical and marine engineering, Post-Graduate Dept., U. S. Naval Academy, Annapolis, Md.

FORREST E. JONES has accepted the position of instructor in the mechanical engineering laboratory of the engineering school, University of Texas, Austin, Tex.

J. H. KLINCK has been discharged from the Army and has returned to the Westinghouse Electric & Manufacturing Company. He will be located in the general sales department of the East Pittsburgh Works.

M. J. PLONSKER has accepted a position as assistant works engineer with the J. I. Case Plow Works Company, of Racine, Wis.

HARRY A. SCHWARTZ, formerly assistant engineer, Defiance Machine Works, Defiance, Ohio, is now manager of research, Research Laboratory, the National Malleable Castings Company, Cleveland, Ohio.

CHARLES H. BROMLEY, associate editor of *Power* for over eight years, is giving up this position to take up engineering and commercial executive duties with the Richardson-Phenix Company, Milwaukee, Wis.

The consolidation is announced of Westinghouse, Church, Kerr & Company, Inc., and Dwight P. Robinson & Company, Inc., under the name of Dwight P. Robinson and Company, Inc. CARL C. THOMAS has been appointed western representative of the new organization. His office, as stated in the October number of MECHANICAL ENGINEERING, is in Los Angeles, Cal.

## NECROLOGY

### ROBERT E. MUNRO

Robert E. Munro, chief inspector of the Baltimore Department of the Hartford Steam Boiler Inspection & Insurance Company, died on March 29, 1920, after a prolonged illness. He was born June 14, 1862, and was educated in Liverpool, England, being graduated from the Liverpool Institute in 1877. After serving his apprenticeship with Rollinson's Engineering Works, Liverpool, his early career was as engineer for various steamship lines, his last engagement being with the Red Star Line, on board the *Pennland*, one of the largest ocean liners of her time. In 1888 Mr. Munro settled in this country and accepted the position of chief engineer for a large oilcloth-manufacturing establishment, at Astoria, L. I., N. Y., remaining there until September 1891, when he became an inspector in the Baltimore office of the Hartford Steam Boiler Inspection & Insurance Company. He was promoted to the position of chief inspector in 1893 and served in this capacity until his death. Mr. Munro became a member of the Society in 1916.

### HENRY WEBBER

Henry Webber was born in Bishops Tawton, Devonshire, England, on September 15, 1848. He was brought to this country when about three years of age, his parents settling in Dunmore, Pa., then known as Bucktown. He lived in Dunmore until the time of his death, January 2, 1920.

Mr. Webber served his apprenticeship as machinist with the Pennsylvania Coal Co., in Dunmore shops for four years, then becoming connected with the Dixon Manufacturing Co., of Scranton, Pa. He worked on the floor erecting engines and in the drawing office on blowing engines, and later became foreman of the shop. For a number of years previous to his death he was a mechanical engineer with the Finch Manufacturing Co. of Dunmore.

Mr. Webber was for some time a member of the Engineering Club of Northwestern Pennsylvania, resigning two years before his death. He became a member of our Society in 1886.

### WILLIAM E. ROBERTS

William E. Roberts was born in Horsforth, England, in February, 1859. He was educated in private schools and in Ikley and Yorkshire Colleges, England.

Mr. Roberts served his apprenticeship with Joseph Whitham & Sons, Leeds, spending two years in the drafting room and four in the various shops of the firm. From 1881 to 1918 he was engaged for periods of from one to four years with the following concerns, thus gaining an unusually valuable experience: Greenwood & Batley, Leeds, draftsman; John Butler & Sons, Stanningley Iron Works, mechanical engineer; Leeds Forge Co., Leeds, chief draftsman; Fox Solid Pressed Steel Co., Joliet, Ill., superintendent; Anaconda Mining Co., Butte, Mont., chief draftsman; W. A. Clark Smelter, Houston, Idaho, master mechanic; Parrot Mining Co., Butte, Mont., mechanical engineer; F. A. Heinze Smelter, Butte, Mont., construction engineer; Illinois Steel Co., Chicago, checker; Indiana Steel Co., Gary, Ind., checker and designer; Fairbanks, Morse & Co., Chicago, checker and designer; Koppers Coke Oven Builders, Chicago, checker and designer; Willputte Coke Oven Corporation, New York, checker and designer. In 1918 Mr. Roberts became connected with the Foundation Oven Corporation, New York, as superintendent of maintenance and construction in their Chicago office, which position he held at the time of his death, February 23, 1920. He was a recognized expert in the coke-oven industry.

Mr. Roberts became a member of the Society in 1918.

### JOSEPH A. CARLOTTI

Joseph A. Carloti, equipment engineer for J. E. Musselman, consulting engineer, New York, died on May 23, 1920. Mr. Carloti was born in 1892 in New York City and was educated in private schools. He entered the employ of J. E. Musselman as junior draftsman and received rapid advancement. As chief draftsman he was responsible for the design of the electrical and mechanical equipment of many of the public buildings in the city. During the War he was assistant to the chief of the electrical and mechanical section of the U. S. Navy Yard in Brooklyn, N. Y., returning to his former position in 1919.

Mr. Carloti became an associate-member of the Society in 1919.

## EMPLOYMENT BULLETIN

**T**HE SECRETARY considers it a special obligation and a pleasant duty to make the office of the Society the medium for assisting members to secure positions by putting them in touch with special opportunities for which their training and experience qualify them, and for helping any one desiring engineering services. The applications listed below combine the services of the Society and of the Engineering Societies Employment Bureau, Engineering Societies Building.

### POSITIONS AVAILABLE

*Stamps should be inclosed for transmittal of applications to advertisers: non-members must accompany applications with a letter of reference or introduction from a member; such reference letter will be filed with the Society's records.*

*Due to new printing arrangements, it has been necessary to advance all copy dates. Accordingly, copy for advertisements received after October 5 has been held for the next issue. In the future all copy for this section will be due on the fifth of the month preceding date of issue.*

**OPERATING ENGINEERS.** Excellent opportunity for four or five young engineers to enter employment of old and well-established company manufacturing a basic commodity. Opportunity of learning business and developing quickly into supervisory operative position of trust. Good salaries from start but applicants must be willing to enter practical work and demonstrate ability before securing promotion. Successful experience in handling men and production desirable. Excellent opportunity for young men desiring permanent association with a basic and growing business, located in New York. Z-1694.

**INSTRUCTORS** for large university, in architecture, civil engineering, electrical engineering, mechanical engineering, theoretical and applied mechanics, physics and railway-mechanical engineering. Location Middle West. Z-1701.

**MACHINE DESIGNER**, with experience and creative ability on development of complicated automatic machinery. American preferred, possessing enough ingenuity and intu-

ition to be able to solve mechanical problems alone. Tool designers, plant, efficiency or production engineers need not apply. Write fully, giving age, experience and patents taken out, if any. Location New York City. Z-1798.

**BUSINESS MANAGER.** Young man of strong character and ability. Experienced in abrasive manufacture and sales. A great opening for permanent connection, but for a high-class man only. Location Pennsylvania. Z-1986.

**COMBUSTION ENGINEER**, mechanical-engineering graduate thoroughly familiar with mechanical stokers. Should have pleasing personality and be capable of conducting boiler tests and assuming responsibility. Work in connection with combustion problems. Location Detroit, Mich. Z-2009.

**ENGINEER** for research work on problems of employment relation. Practical experience in industry and training in economics required. Location New York City. Z-2029.

**EXECUTIVE DESIGNING ENGINEER** for consulting engineers' office on general municipal work including water works, hydraulic, sanitary, sewage disposal projects, etc. Must have broad general experience, and have sufficient executive ability to take charge of office in principal's absence. Location New York City. Z-2116.

**INSTRUCTOR** in pattern making and foundry. Location Texas. Z-2119.

**INSTRUMENTMAN** for engineering department capable later on of becoming assistant. Should be technical graduate of first-rate school and have two or three years' of experience in municipal field. Junior member of A.S.C.E. preferred. Location Pa. Z-2139.

**MECHANICAL ENGINEER** capable of taking

leading part in engineering department as designer-checker for manufacture of general-transmission, saw-mill machinery, oil-field rigs, engines, refinery work of growing concern. Good living conditions. Young man desiring permanent location to grow in service and responsibility preferred. State age, training, experience and salary expected. Location Texas. Z-2145.

**WORKS MANAGER**, experienced man capable of handling several hundred employees who has made good on intensive machine-shop work involving duplicate plants made to close limits. Must have faculty of producing at low cost without any sacrifice of quality and have thoroughly demonstrated his potentialities. Foundry experience desirable but not essential. Salary commensurate with capability. Location New Jersey. Z-2149.

**INSTRUCTORS** in mechanics, mathematics and drawing. Must be graduate engineer. Location Minnesota. Z-2155.

**PRODUCTION MANAGER** for large printing company with several plants in U. S. and Europe manufacturing printing machinery. Location New York City. Z-2159.

**ENGINEERING DRAFTSMEN** for automatic machinery. Must be technical graduates and able to make detail drawings from sketches or verbal instruction. Three men needed. Location New York City. Z-2160.

**DIAMOND DRILLER** with calyx shop-drill experience to go to India. 2-year contract. Location India. Z-2161.

**CHIEF ENGINEER** for Public Works Department for foreign country. Must have broad experience in all kinds of construction work such as docks, harbor, highways, water-works, etc. Must speak Spanish. Member of

A.S.C.E. preferred. Location West Indies. Z-2174.

**ORGANIC CHEMIST** to have charge of chemical laboratory. Must be able to direct work and should have at least three years' experience. In connection with experiment laboratory of U. S. Army, Air Service, Balloon & Airship Branch. Location Nebraska. Z-2175.

**ENGINEER** to look after mechanical end of power plant in China. Plant is about completed and will consist of two 2000 kw. Curtis turbines. General Electric alternators, 3000 hp. boilers, Murphy stokers, superheaters, etc. Must have practical experience. Quarters will be furnished single men and \$60 per month will be allowed married men for quarters. Location China. Z-2178.

**TECHNICAL GRADUATE** along either mechanical or hydraulic lines. Prefer a man with two or three years' experience in construction work who would work into scheming and preliminary stages of hydroelectric work. Location Mass. Z-2180.

**MECHANICAL ENGINEER OR DESIGNER**, air-compressor expert, experienced in handling general experimental work independently; one able to figure cost and production. State fully experience, references and initial salary. Location New York City. Z-2185.

**GRADUATE MECHANICAL ENGINEER**, preferably one with a few years' experience in the manufacturing business, to work in various positions in mechanical department, with the hope that within year he would be able to take full charge of department. Work would include maintenance and repair of present equipment, installation of small amount of new equipment, lay-out of new departments, and installation of new machinery. Location Mass. Z-2188.

**DESIGNER** for feedwater heaters. Must have had experience in this line of work. Location Chicago, Ill. Z-2196.

**ASSISTANT EXPERIMENTAL ENGINEER** for large sugar corporation with several factories in Cuba and headquarters in Havana. Must be graduate mechanical engineer with sufficient experience in research work (preferably in sugar engineering) to take responsible charge of men, plan work, etc. Knowledge of Spanish desirable though not essential. Prefer single man, age 26-32. Good salary to right man. In writing state salary desired. Z-2200.

**MECHANICAL ELECTRICAL DRAFTSMAN** with electric-locomotive and multiple-unit-control car experience, as well as wiring and lighting equipment for steam cars. Location New York City. Z-2212.

**DESIGNER** for plant-layout work with artificial silk-machinery experience if possible. Board work only. Location New York City. Z-2214.

**MECHANICAL ENGINEER**, technical graduate with machine-shop experience for responsible position. Will report directly to general superintendent. Prefer man between 35 and 45 years. Should have good organizing ability and be experienced in production and inspection of such machinery as steam turbines and reduction gears. Location Pa. Z-2217.

**MECHANICAL ENGINEER** experienced in shop work and special machinery. Must be able to design and construct machines, also development work in this line. Some drafting. Permanent position. Location Brooklyn, N. Y. Z-2218.

**SUPERINTENDENT** for machine shop. Must be experienced in machine-shop practice and have worked way up through shop to executive position. Location Ohio. Z-2226.

**INDUSTRIAL ENGINEER** to take charge of production and office work, cost system already established, practical machine-shop experience necessary. Location Ohio. Z-2227.

**FOREMAN** of electrical, mechanical-instrument laboratory. Must be technical graduate or have had experience to substitute for such training. Also 3 section leaders with similar

experience. Americans only. Location New Jersey. Z-2234.

**MECHANICAL ENGINEER** for Chile. One with some sales experience and who speaks Spanish. Z-2237.

**YOUNG TECHNICAL GRADUATE**, mechanical, to assistant chief engineer. Concern manufactures various types of lawn mowers. Should have drafting and design experience on tools, jigs, fixtures and product (small grey and malleable castings) and be capable of taking charge of small drafting force. Would be held responsible for checking and detail work of drafting room and assist in laying out the work for department. Location New York State. Z-2240.

**SANITARY ENGINEER** and also sanitary and heating draftsmen. Should have plumbing, sewage-disposal and water-supply experience. Four men needed. Location Albany, N. Y. Z-2243.

**ESTIMATOR** on office and hotel structure. Also brick and steel reinforced-concrete buildings. Location New York City. Z-2245.

**TIME-STUDY ENGINEER**, with machine-shop operation and adding-machine experience. Able to estimate from blue prints. Only men with this experience will be considered. Location Brooklyn. Z-2252.

**YOUNG MECHANICAL ENGINEER**, preferably recent technical graduate, for position of sales engineer on steam-plant equipment. Write fully. Location New England. Z-2253.

**CONSTRUCTION FOREMEN**, two, on frame construction, to erect roller coasters and other amusement devices. Must be able to take full responsibility of field work and to secure speed without waste. Good opportunity for profitable and permanent connection for man who can show results. Must be able to travel. State qualifications and experience, salary desired, etc. Z-2254.

**MECHANICAL ENGINEER**, must have intimate knowledge of industrial conditions particularly factory conditions, and able to speak convincingly; well fitted to take up subject before employers' associations as well as individual employers. Give details of experience. Location New York. Z-2255.

**DRAFTSMAN**, with experience in railway-passenger and freight-car construction. Some shop maintenance experience also required. Young man preferred. Knowledge of Spanish desirable but not essential. Location Havana, Cuba. Z-2257.

### MEN AVAILABLE

*Only members of the Society are listed in the published notices of this section. Copy for notices should be on hand by the 5th of the month preceding date of issue and should be limited to 45 words. The form of notice should be such that the initial words indicate the classification. Notices are not repeated in consecutive issues.*

**INDUSTRIAL ENGINEER**, of sound judgment and proven ability, member of firm of well-known industrial engineers with 14 years' experience designing and equipping plants for varied industries, planning production and devising cost systems, seeks connection with large manufacturer having plants to establish or develop. Location no object, but opportunity to acquire interest as results warrant. SM-5624.

**MECHANICAL ENGINEER** and **EXECUTIVE**, 35, M. E. degree, 15 years' engineering experience covering construction of industrial plants, power plants, special automatic machinery, Diesel oil engines. Thoroughly practical with executive ability and not afraid of responsibilities. At present employed as chief engineer, special department, large concern. Desires opening where initiative and experience along above lines are wanted. Present salary \$6,000. SM-5625.

**CHIEF DRAFTSMAN**, or assistant chief engineer desires responsible position with progressive company. Have specialized in design, installation and operation of high and low-pressure air, oxygen, hydrogen, acetylene and gas compressors. Experience as testing and erecting engineer. SM-5626.

**FACTORY EXECUTIVE**, age 32, Stevens graduate. Has worked up through ranks serving successfully as machinist, foreman, designer, plant engineer, superintendent, mechanical engineer and factory manager. Broad experience in all phases of industrial engineering and management. Desires to affiliate with medium-size concern. SM-5627.

**MECHANICAL ENGINEER**, graduate, 37. Experience as chief engineer, production and sales engineer. Have worn overalls. Know automotive and general mechanical construction and particularly familiar with pressed-steel industry. Prefer sales work in Detroit but will consider any proposition with live concern. SM-5628.

**MASTER MECHANIC**, American, age 32, 10 years' broad experience in design installation, maintenance and successful handling of labor. Salary \$5,000. SM-5629.

**HIGHLY-TRAINED MECHANICAL EXECUTIVE**, desires position requiring broad-gage man; 20 years' manufacturing experience, acquired as tool-room foreman, general supervisor of equipment, general superintendent, works manager, assistant general manager, and general manager. Have successful record as executive. Familiar and in sympathy with best shop methods. Will gladly furnish detail of experience with references. SM-5630.

**MECHANICAL ENGINEER** or general superintendent, age 33, married. Eighteen years on connection with mechanical lines, from shop bench to chief engineer and general superintendent in charge of responsible work. Design, productions and inspection of machine tools and product, for quantity production of interchangeable parts. Can get along with all kinds of labor and elements without friction and get results. Location immaterial. SM-5631.

**WORKS MANAGER**, general superintendent or production engineer, with five years' practical experience in organization, accounting, planning and estimating production and material control in sheet-metal, paint-machine, plating-automobile, woodworking and galvanizing shops employing up to 3000 men. Technical graduate, age 29, minimum salary \$7,500. SM-5632.

**GRADUATE MECHANICAL ENGINEER**, 4 1/2 years' assistant construction and building superintendent, capable of handling men in all building trades, ordering and specifying materials. Three years' designing, i.e., mechanical-plant layouts, structural-steel and reinforced-concrete details, piping and heating and ventilation. References furnished. Salary \$360 per month. SM-5633.

**MECHANICAL ENGINEER** and **PATENT ATTORNEY**, Technical graduate, 48, with varied experience, including machine design, steam engineering and 9 years' of patent practice; has inventive and literary ability, talking knowledge of German and Russian, and reading knowledge of French. Efficient. SM-5634.

**PRODUCTION MANAGER** or **FACTORY SUPERINTENDENT** desires to locate with metal-manufacturing firm located in Philadelphia or immediate vicinity, age 29, married, experienced in up-to-date factory methods and foundry practice. Capable of assuming charge of medium-sized plant including engineering work. Familiar with purchase of materials and has good knowledge of source of supply in Philadelphia territory. Salary commensurate with responsibility. SM-5635.

**MECHANICAL-ELECTRICAL ENGINEER**, experienced in design and manufacture of electrical apparatus. Specialist in development of switches, electro-magnets, contractors, relays, compensators, controllers, etc., for

electric motors. Inventor of numerous commercially successful devices. Salary expected \$5,000. SM-5636.

**EMPLOYMENT MANAGER and PERSONNEL DIRECTOR**, age 31, machinist trade, technical education, 6 years' experience as organizer and executive. Had direct charge of employment, promotion, transfer, safety, education, welfare, women's activities plant paper. Available October 1. SM-5637.

**ENGINEER**, R. P. I. Cuban, age 29. Capable of designing complete sugar plants. Familiar with types of machine used in sugar industry. Experienced in construction of complete plant. Can discuss changes for improving plant. Speaks both English and Spanish fluently. SM-5638.

**MACHINE DESIGNER**, technical graduate. Experience on cord-tire-winding machinery, automatic-match machinery, excavating machinery, etc. Strongest qualification, working out mechanism to accomplish required results and reducing same to simple and practical form. Have handled difficult problems. SM-5639.

**MECHANICAL ENGINEER**, technical graduate. Have made steam turbines my specialty. Three years' practical experience in construction, testing and design of steam turbines. Desires position with growing concern leading to executive responsibilities. SM-5640.

**PAPER and PULP MILLS**. Member A.S. M.E., married, American; former mill manager, with broad experience in industrial engineering and construction, practical knowledge of manufacturing, office detail and cost accounting, desires opportunity as assistant to executive in administration, manufacturing or in charge of department, where experience, ability and loyalty will meet with just recognition. Excellent references. Recently returned from abroad and available immediately. SM-5641.

**PLANT ENGINEER**, graduate mechanical engineer, junior member, six years' experience, test, design, construction and operation of steam-electric plants. Four years' publicity experience office and field. Construction superintendent 3000 kw. industrial plant. Present chief engineer large cereal-products plant. Executive ability. Salary \$3,600. Available 30 days notice. SM-5642.

**SALES ENGINEER**, technical graduate, age 25, married, familiar with big industrial trade in St. Louis and vicinity. At present handling line of power-transmission machinery, wishes new connection with concern in mechanical equipment line to call on same trade. SM-5643.

**TOOL DESIGNER**, wide experience on jigs, fixtures and gages. Prefer New York City, but would go anywhere. Minimum salary \$45. SM-5644.

**SALES ENGINEER**, graduate mechanical engineer, with ten years' experience in designing, operating and selling power-plant and industrial-plant equipment in metropolitan district, desires position as sales engineer or New York representative. SM-5645.

**ASSISTANT PRODUCTION ENGINEER**, technical education, 8 years' experience at production and industrial engineering, planning, estimating and designing. Capable of assuming responsibilities and handling men. Have had successful experience as chief tool designer, head of operation layout and planning department and assistant production engineer. Salary \$3,000. Vicinity New York. SM-5646.

**SALES ENGINEER**, 30 years old, married, college graduate in mechanical engineering, home in New York City, wants to sell alloy or tool steels, or represent manufacturers of power-plant equipment. Salary or commission, with prospect or earning over \$5,000 first year. Four years of sales experience on power plants. Two years' sales representative for high-grade steel mill. SM-5647.

**MECHANICAL ENGINEER**, M. I. T., 28,

married. One year as electrician, machinist; machine designer. Two years as mechanical engineer on maintenance and new designs. Two years on time study, analysis and improvement of process, factory layouts, standardization, costs. Location New England. SM-5648.

**ENGINEER**, graduate M. E., 26, desires responsible position in technical or commercial capacity. Four years' experience covering shop, drafting and sales work. Now employed in executive capacity with industrial furnace concern, work entailing design, erection and sales. Present salary \$3,100. SM-5649.

**FACTORY EXECUTIVE or PRODUCTION MANAGER**, age 40, married; 16 years' experience in plant management, including production, plant engineering, plant layout, building construction, maintenance, welfare, fire prevention and safety. Have specialized in manufacture of rubber material. At present employed in this line. Eastern location preferred. Minimum salary \$4,800. Can furnish best of references. SM-5650.

**SUPERINTENDENT or PRODUCTION MANAGER**, college graduate. Eighteen years' practical experience in shops and executive positions. Training in rapid interchangeable productions using most-up-to-date methods, inspection and assembling operations. At present holding position of similar nature but desires change. Location immaterial. SM-5651.

**LUBRICATION or SALES ENGINEER**, graduate; experience in selecting, testing, and subsequent sale of lubricants in industrial plants. Road experience both from engineering and sales end. Desires connection which assures future for one with pleasing personality, is energetic, and can show results. Will travel. SM-5652.

**PLANT EXECUTIVE, or PLANT ENGINEER**, at present employed in similar capacity. Age 29. Has also been successful superintendent of large mill. General mill experience, buying, contracting, machine-design and maintenance, shop-operation, air-conditioning, heating, ventilating, and blower work. Salary expected \$3,600. SM-5653.

**SUPERINTENDENT of construction or maintenance engineer**, age 44, desires position as plant maintenance engineer or similar position. Ten years' practical experience and 14 years' experience on plant construction and layout, power-house design and installation. Capable of handling-maintenance and construction and master-mechanic work. Technical graduate, married. Assoc. Member A.S. M.E. Salary \$3,600. SM-5654.

**REPRESENTATIVE**, college graduate, M.S., M.E., 36, linguist, fundamental experience United States; 10 years' service Anglo Egyptian Government in capacity chief appraiser machinery, desires connection with manufacturer of any class machinery oil corporation, automobile or tire concern. Special representative for Egypt, Palestine and Sudan. SM-5655.

**MECHANICAL ENGINEER**, age 35, 12 years' practical experience on design and construction of special machinery, automatic machinery and machine tools; desires executive position with reliable firm. Good executive. Salary \$3,500 per year. Location immaterial. SM-5656.

**TECHNICAL GRADUATE**, Yale 1919 and 1920. Mechanical and industrial engineering. Desires opening as assistant in production work or with industrial-engineering firm. Location preferably New York City. SM-5657.

**INDUSTRIAL ENGINEER**, ten years' experience in design, construction, operation of mechanical and electrical equipment, production manager and employment manager. Open for engagement January 1 or before. Permanent location desired in southern states or Pacific coast. American and foreign experience, fluent Spanish, business training. Can handle men, materials and money efficiently. Specialist in design and construction,

or rehabilitation, of factories and their organizations. Salary \$6,000. SM-5658.

**MECHANICAL ENGINEER**, 26, technical graduate, two years' machine shop, four years' mechanical draftsman on boilers, steam power-plant piping, heating, fire protection, sprinkler systems, mechanical maintenance for large industrial company, one year mechanical resident engineer on large cotton-mercerizing plant, designing and layout of mechanical section of plant. Available immediately. Salary immaterial. SM-5659.

**MECHANICAL and COMBUSTION ENGINEER**, American, age 30, graduate M.E. Lehigh Univ. At present correspondent and combustion engineer with large stoker company; desires position with progressive company as assistant engineer. Congenial, wide-awake, good personality. Four years' experience in power plant, including design, testing and operation. Minimum \$3,000. Middle West or East desired. SM-5660.

**MAINTENANCE ENGINEER**, or similar position desired by technical graduate; 20 years' experience on industrial-plant planning, maintenance and construction of buildings and equipment; design; construction and operation of power plants. Good executive ability. Desires permanent connection in responsible position. At present employed; available about November 1. Salary \$6,000. SM-5661.

**TECHNICAL GRADUATE**, ten years' experience; five in shop, drawing-room, estimating and sales department for one concern, and five years as district sales manager for another machinery company. Wishes to connect with small manufacturing business, where opportunity will be given to work into management and buy an interest. References. Married, age 33, and have two children. Prefer Wisconsin, Minnesota or Illinois. Familiar with Missouri, Kansas, Nebraska and Colorado. SM-5662.

**SALES MANAGER**, graduate mechanical engineer, specialized in merchandizing end of engineering, open for position as sales manager. Has 12 years' broad experience as sales manager and technical publicity manager, with sales of over two million dollars per year. Intimately acquainted with steel business, anti-friction bearing business and power plants. Desires opportunity to demonstrate ability to merchandise high-grade product on national scale, where making good will be adequately compensated. New York headquarters preferred. SM-5663.

**MARINE ENGINEER or SUPERINTENDENT ENGINEER**, 19 years' experience, shop, maintenance, building installation, operation, inspection and repairs. Drafting of ships, engine boilers and machinery. Technical graduate and chief engineer's certificate. Will go anywhere. \$7,200 per annum. SM-5664.

**PLANT ENGINEER and MANUFACTURING EXECUTIVE**, technical graduate; 15 years' general engineering and contracting experience. At present in entire charge of all construction and maintenance for very large tool manufacturing concern. Used to extensive responsibilities along these and similar lines. Particularly familiar with shipyard management and vessel repairing. SM-5665.

**EXECUTIVE**, assistant to president or general manager of manufacturing concern. Technical education; 12 years' experience; married, 35; protestant; engaging personality. Best of references. New York City. SM-5666.

**MACHINE-SHOP FOREMAN**, associate member, age 38, 23 years' practical experience in all branches of trade; have been executive for past 12 years. Have proven to be good organizer and leader of men and can positively guarantee results. SM-5667.

**MECHANICAL ENGINEER**, broadly trained, technical graduate, age 32; desires executive position with progressive concern or as assistant

to high executive. Ten years' practical experience in machine-shop, drafting-room, industrial-engineering work, and as appraisal engineer. Energetic, resourceful, good personality, excellent results in handling men. SM-5668

**MAINTENANCE or PLANT ENGINEER**, technically educated, age 38; 16 years' broad engineering experience on organization, design, construction and maintenance of industrial plants and power houses; desires position with progressive concern. Available about November. New England or eastern states preferred. Minimum salary \$4,000. SM-5669.

**MECHANICAL ENGINEER**, age 31, technical and practical experience covering 15 years on design and manufacture of special automatic machinery, machine tools, jigs, fixtures, and dies, plant-engineering, layout and production methods; desires opening as engineer, chief draftsman or assistant to executive. Salary \$3,300 with chance to advance. SM-5670.

**VICE-PRESIDENT and TREASURER**, technical man, broad experience engineering, production, sales, and accounting. Desire larger opportunity. Willing to serve as engineer, production manager or auditor. Salary \$7,500. Only first-class Eastern corporations will be considered. SM-5671.

**PLANT ENGINEER**, superintendent of power, etc., for past three years in charge of both steam and electric ends of 9,000-kva. central

station and have shown steadily and materially improving operation. Successful in handling labor under trying conditions and devising simple methods of improving economies. Graduate M.E., married. SM-5672.

**SUPERINTENDENT of MANUFACTURING PRODUCTION** or assistant to works manager, age 36, married; executive and practical mechanic. Thoroughly experienced in production and manufacturing. Good organizing executive in tool, gage and die work, routing processing sequences of operation. Can handle office and production charts and maximum at minimum cost. Excellent record during past 5 years as production superintendent and assistant M.E. in factory of 6,000. SM-5673.

**MECHANICAL ENGINEER**, 38, married, M.E. graduate; 16 years' experience in steam engineering, reciprocating machinery and Unaflo engines, as draftsman, chief, designer, testing, research, superintending, consulting engineer and inventor. Desires suitable position in research, experimental, development or design, preferably steam engineering. Highest references. Resourceful, energetic and capable to take charge. SM-5674.

**MANUFACTURING EXECUTIVE**, management duties and manufacturing details to be carried on in conjunction with improvements in plant layout, and manufacturing processes, if necessary, selection and purchase of industrial

equipment, routing and handling of material, production control by experienced M.E. Married. Present salary \$5,200. SM-5675.

**CHIEF OPERATING ENGINEER** or master mechanic, with wide experience and executive ability. Familiar with engines, steam turbines, boilers, water and fire tubes, and practical machinist and boiler maker. Technical knowledge, and hold a marine and stationary engineer's license. SM-5676.

**MECHANICAL ENGINEER**, now employed by large steam and electric railway desires position in states. Thirteen years' experience in steam and electric railway work and allied lines. Has filled positions from locomotive special apprentice to shop superintendent, and draftsman to chief mechanical engineer. Would like to enter engineering-sales field. Can speak Spanish and is now in Cuba. Would consider \$300 per month. SM-5677.

**MECHANICAL INDUSTRIAL PRODUCTION ENGINEER** or superintendent, graduate mechanical engineer, age 36, married, 14 years' practical experience, general factory engineering, construction and plant maintenance, designing and building of special improved machinery, labor-saving devices, fixtures and dies for increased production. Broad experience in handling men, shop-processes, material, equipment and tools, organization-production control. SM-5678.

## CANDIDATES FOR MEMBERSHIP

TO BE VOTED ON AFTER NOV. 12, 1920

**B**ELOW is a list of candidates who have filed applications since the date of the last issue of MECHANICAL ENGINEERING. These are arranged geographically. Applications for change of grading are also posted. The total number of applications received and listed below is 133.

*The Membership Committee, and in turn the Council, urge the*

*members to scrutinize this list with care and advise the Secretary promptly of any objections to the candidates posted. All correspondence in this regard is strictly confidential. Unless objection is made to any of the candidates by Nov. 12, 1920, and provided satisfactory replies have been received from the required number of references, they will be balloted upon by the Council.*

### NEW APPLICATIONS

#### Alabama

HENDERSON, ROBERT M., Vice-President  
National Pipe & Foundry Co., Attalla

#### Arizona

GENOVAR, HARRY F., Manager, Tucson  
Office, Chas. C. Moore & Co., Tucson

#### California

CRONHOLM, FREDERICK N., General Manager, Imperial Irrigation District, Calexico  
HARRIS, ELMER M., Sales Engineer, York California Construction Co., Los Angeles  
HILLS, LESLIE WM., Engineer, Hills Brothers, San Francisco

JOHNSTON, CLARENCE L., Vice-President & Production Manager, Merchant Calculating Machine Co., Emeryville  
PERSELL, EDGAR C., Standard Oil Co., Richmond

#### Connecticut

DAVIDSON, EZRA D., Sales Engineer, Farrel Foundry & Machine Co., Ansonia  
DECHERD, KIRTLAND W., The Charles Parker Co., Meriden  
DOW, RICHARD F., Engineer, Whitney Manufacturing Co., Hartford  
DOWNS, HARRY N., Chief Operating Engineer, Sidney Blumenthal & Co., Shelton  
GAITHER, GEORGE M., Jr., Winchester Repeating Arms Co., New Haven  
HARTEN, JOHN, Division Engineer, Pratt & Whitney Co., Hartford  
LANCE, WILLIAM W., Assistant Mechanical Engineer, Fort Wayne Corrugated Paper Co., Hartford  
LEWIS, RICHARD C., Farrel Foundry & Machine Co., Ansonia  
HOULMMEDIEU, FRANK' L., Deep River  
LOVENSTEIN, HANS J., Vice-President, The Hartford Precision Tool Co., Hartford

MALLOY, JOHN D., Assistant Foreman, The Veeder Manufacturing Co., Hartford  
REYNOLDS, FRANCIS J., Salesman, The Bristol Co., Waterbury  
RUSSELL, JAMES W., Training Engineer, Winchester Repeating Arms Co., New Haven

SCHICKEL, NORBERT H., President, The Schickel Motor Co., Stamford  
SCHNUCK, CARL F., Chief Draftsman, Farrel Foundry & Machine Co., Ansonia  
SPILLANE, JOHN F., Charge of Electric Generating Plant, Winchester Repeating Arms Co., New Haven

#### District of Columbia

KARSUNKY, WILLIAM, Manager, Highway Garage, Washington

#### Georgia

BRITTINGHAM, THOMAS H., Associate, Thos. G. Brittingham, Augusta  
ELSAS, NORMAN E., Assistant, Fulton Bag & Cotton Mills, Atlanta

#### Illinois

BUCHANAN, JAMES M., District Turbine Specialist, Chicago Office, General Electric Co., Chicago  
CARTER, JAMES H., Power Department, Aluminum Ore Co., East St. Louis  
GARDNER, WALTER A., Mechanical Designer, National Boiler Washing Co., Chicago  
HOISINGTON, HARRY, Ordnance Engineer, Ordnance Department at Large, Rock Island Arsenal, Rock Island  
LAMBERT, JOSEPH L., Sales Engineer, G. S. Blakeslee & Co., Cicero  
LIEBICH, FRANK A., Whiting Foundry Equipment Co., Harvey  
MARTIUS, FREDERICK T., Engineer, National Boiler Washing Co., Chicago

MURRAY, J. VINCENT, Industrial Engineer, J. Lee Nicholson & Co., Chicago  
TUCKER, RAYMOND R., Safety Engineer, Aluminum Ore Co., East St. Louis

#### Indiana

CARLISLE, FRED B., Factory Representative, Coöperative Department, Studebaker Corporation, South Bend  
HEIDENGER, HENRY W., Motive Power Inspector, Pennsylvania System, Terre Haute  
HOLMES, JOHN Q., Assistant to Consulting Engineer, Nordyke & Marmon Co., Inc., Indianapolis

#### Louisiana

JACKSON, SAMUEL D., A. M. Lockett & Co., Ltd., New Orleans  
WYLER, CHARLES J., Chief Draftsman, A. M. Lockett & Co., New Orleans

#### Maryland

ALTHEN, GEORGE R., Engineer of Distribution, Consolidated Gas, Electric Light & Power Co., Baltimore  
COOK, HENRY R., Jr., Assistant Chief Engineer, Consolidated Gas, Electric Light & Power Co., Baltimore  
COOPER, CHESTER A., Boiler Inspector, Maryland Casualty Co., Baltimore

#### Massachusetts

DAVIS, DANIEL L., Draftsman, Morgan Construction Co., Worcester  
KRULL, LEONARD M., Foundry Grinding Engineer, The Norton Co., Worcester  
LYNCH, DANIEL J., Jr., Computer, General Electric Co., Lynn  
TEEL, LAWRENCE H., Mechanical Engineering Designer, A. C. Lawrence Leather Co., Peabody  
WOOD, THOMAS A. S., Construction Engineer, Lewis Recovery Corp., Boston

**Michigan**

GOGAN, JOSEPH, General Superintendent, Detroit Steel Products Co., Detroit  
 MCGREGOR, HOWARD L., Assistant to President, National Twist Drill & Tool Co., Detroit  
 SAYNER, LAURENCE, Director of Service Training, Lincoln Motor Co., Detroit

**Mississippi**

PHILIPS, RAN L., Superintendent of Power & Equipment, Gulfport & Mississippi Coast Traction Co., Gulfport

**Missouri**

EIGENBROT, JOHN L., Superintendent, Station "A," Laclede Gas Light Co., St. Louis  
 MURRAY, FREDERICK F., Engineer, Commercial Journal Co., St. Louis

**Nebraska**

DONNER, WILLIAM E., Engineer, Henningson Engineering Co., Omaha

**New Jersey**

ABERCROMBIE, W. TAYLOR, JR., Draftsman, U. S. Cast Iron Pipe & Foundry Co., Burlington  
 BEVAN, THOMAS D., Engineer of Power Plants, Central Railroad Co. of New Jersey, Jersey City  
 CERES, ROBERT R., Maintenance Machinist, E. I. duPont de Nemours Co., Arlington  
 DECAMP, WITSEL R., Secretary & Works Manager, DeCamp & Sloan, Inc., Newark  
 FAUNCE, BENJAMIN W., Progress Engineer, New York Shipbuilding Corp., Camden  
 HUBBELL, GEORGE W., Mechanical Engineer, Babcock & Wilcox Co., Bayonne  
 HUNTER, CLARENCE J., Manager, Philadelphia Office, Foster Engineering Co., Newark  
 JOHNSON, FREDERICK E., Designing Engineer, Singer Manufacturing Co., Elizabethport  
 KELLY, PHILIP M., Inspector, Motive Power Dept., Central Railroad of New Jersey, Jersey City  
 LISSON, REUBEN, Estimator, Babcock & Wilcox, Bayonne  
 MCCREA, C. LESLIE, Sales Engineer, Graphoscope Development Co., Newark  
 O'NEILL, WILLIAM E., Tool Supervisor, Willys Corp., Elizabeth  
 OWEN, CHARLES D., Chief Engineer, Passaic Print Works, Passaic  
 TRAVIS, JAMES I., Weston Electrical Instrument Co., Newark

**New York**

BILLIPP, ERNEST H., Partnership with John J. Naugle, New York  
 BURT, WALTER R., Miller, Franklin, Basset & Co., New York  
 CHRISTIE, MORRISON, Chief Draftsman, W. J. Wayte, Inc., New York  
 COLSTON, ROBERT, Assistant Marine Sales Manager, The Grisoom-Russell Co., New York

ECKLER, HARRY, Production Engineer, Library Bureau, Iliion  
 HUDA, RUDOLPH E., Estimator & Draftsman, N. Y. Refrigerating Machine Department, H. W. Johns Manville Co., New York  
 KRELLEN, HARRY I., Draftsman, S. K. F. Industries, New York  
 LINDQUIST, DAVID L., Chief Engineer, Otis Elevator Co., New York  
 MCCARTY, RICHARD J., JR., Superintendent, Saratoga Division, The Delaware & Hudson Co., Albany  
 MULLINER, GEORGE W., Member of Company, Mulliner Brothers, Syracuse  
 PARKER, BENJAMIN M., Assistant Engineer, The R. B. Wolf Co., New York  
 SMITH, FLOYD T., Commercial Engineer, General Electric Co., Schenectady  
 WILKS, VICTOR H., Supervisor of Equipment, Dwight P. Robinson & Co., Ind., New York  
 ZIERICK, AMBROSE E., Tool & Machine Designer, Service Engineering Co., Brooklyn

**North Carolina**

CLOYD, EDWARD L., Instructor, North Carolina State College, West Raleigh

**Ohio**

BOYD, HUGH, Engineer, National Carbon Co., Inc., Cleveland  
 KNERR, DAN G., Assistant Factory Manager, Computing Scale Co., Dayton  
 LEHNERT, JOHN, Tool & Machine Designer, Timken Detroit Axle Co., Canton  
 MAXWELL, ROBERT C., Lebanon  
 MORRIS, A. MASON, Pittsburgh Valve & Fittings Co., Barberton  
 RIORDAN, JOHN M., General Manager, The Vahan Products Co., Cleveland  
 SCHULZ, GEORGE H., Mechanical Estimator, Wellman, Seaver, Morgan Co., Cleveland  
 SCOTT, HARRY E., Assistant Chief Engineer, Brown Hoisting Machinery Co., Cleveland  
 SHANER, EARL L., Engineering Editor, Iron Trade Review, Penton Publishing Co., Cleveland

**Oklahoma**

GILCREST, MURRAY H., Assistant Superintendent, United States Zinc Co., Sand Springs

**Pennsylvania**

ALLEN, J. WALLACE, Efficiency Engineer, Clairton By-Product Coke Works, Clairton (Re-election)  
 ASTON, JAMES, Metallurgical Engineer, A. M. Byers Co., Pittsburgh  
 HOLLANDER, OTTO, Marine Draftsman, Bethlehem Shipbuilding Corp., Ltd., Bethlehem  
 JONES, YEAMANS P., Shop Efficiency Engineer, Hess-Bright Manufacturing Co., Philadelphia  
 KULP, HENRY B., Assistant to Master Mechanic, Phoenix Iron Co., Phoenixville  
 LUCKENBACH, J. LEWIS, Designing Engineer, Wilson-Ruff Co., Philadelphia  
 McLEAN, CRANDALL D., Draftsman & Checker, Basset & Slaughter, Inc., Philadelphia  
 MARIS, JAMES C., Shop Representative of Engine Department, Baldwin Locomotive Works, Philadelphia  
 O'BRIEN, ISAAC K., Construction Engineer, Atlas Powder Co., Philadelphia  
 RECH, PHILIP D., Junior Engineer, H. S. B. W. Cochrane Corp., Philadelphia  
 RODGERS, PAUL C., Eastern Sales Manager, Phoenix Iron Works Co., Meadville  
 ROSS, THEODORE H., Sales Engineer, Andrews-Bradshaw Co., Pittsburgh  
 SELDEN, GEORGE D., JR., District Sales Agent, Erie City Iron Works, Erie  
 SHAFER, ALFRED E. M., Draftsman, New Jersey Zinc Co., Palmerton  
 WEI, TSEN FU, Draftsman, Bethlehem Shipbuilding Co., Bethlehem

**Rhode Island**

BUTTERFIELD, FREDERICK C., Taft-Peirce Manufacturing Co., Woonsocket  
 WATERMAN, BENJAMIN F., Designer, Brown & Sharpe Manufacturing Co., Providence

**Tennessee**

ROBERTS, JAMES T., JR., Sales Engineer, Walsh & Weidner Boiler Co., Chattanooga

**Texas**

NORRIS, JOHN A., Board of Water Engineers, Austin

**Virginia**

DAVENPORT, FRANK B., Lubrication Engineer, The Texas Co., Norfolk  
 GOEBEL, WILLIAM H., Lubrication Engineer, The Texas Co., Norfolk  
 WHITE, ALBERT L., JR., Draftsman, Newport News Shipbuilding & Dry Dock Co., Newport News

**Wisconsin**

MAURER, JOHN D., Assistant General Superintendent, Illinois Steel Co., Milwaukee  
 RILEY, FRANCIS H. M., Representing Manufacturers of Power Plant Equipment in State of Wisconsin, Milwaukee  
 SCHAFER, ROY, Senior Draftsman, The Falk Co., Milwaukee

**Australia**

STOWARD, WILLIAM H., Chief Engineer, Bingera Sugar Plantation, Bundaberg, Queensland

**British West Indies**

MASCALL, ERNEST, Trinidad Leaseholds, Ltd., Point-a-Pierre

**West Indies**

PETERSON, GARFIELD C., Manager, Central Machete, Guayama

**CHANGE OF GRADING**

PROMOTION FROM ASSOCIATE

**Ohio**

BEVER, JOHN J., Manager, Foundry Department, The Otis Steel Co., Cleveland

**Oklahoma**

HEID, J. BENJAMIN, Consulting Petroleum Engineer, Tulsa

**Pennsylvania**

WALKER, LEE E., District Sales Engineer & Assistant Manager, Good Roads Machinery Co., Philadelphia

PROMOTION FROM ASSOCIATE-MEMBER

**Connecticut**

GREIG, ALEXANDER, Superintendent, The Connecticut Tubing Co., Hartford

**Indiana**

HUNTER, SAMUEL R., Manager, Oil Engine Division, Dodge Sales & Engineering Co., Mishawaka

**Massachusetts**

FAY, CHESTER H., In charge of Designing, Morgan Construction Co., Worcester  
 WILSON, CHESTER W., Superintendent, B. O. & G. C. Wilson, Inc., Boston

**New York**

LANE, AUGUSTUS HAYWARD, Mechanical Engineer, Cohoes Iron Foundry, Cohoes

**Ohio**

SEES, JOSEPH F., Works Manager, Miller DuBrul & Peters Manufacturing Co., Cincinnati

**Pennsylvania**

McDERMET, JOHN R., Research Engineer, Elliott Co., Jeannette

PROMOTION FROM JUNIOR

**California**

ROSEN, CARL G. A., Diesel Engineer, Dow Pump & Diesel Engine Co., Alameda  
 TAYLOR, GEORGE E., Head of Engineering Department, Meese & Gottfried Co., San Francisco

**Maine**

SANDERS, WALTER C., Lieutenant, 42nd Railroad Artillery, United States Army, Bangor

**Missouri**

RYDER, FREDERICK W., Sales Correspondent, Laclede Christy Clay Products Co., St. Louis

**New York**

NEWMAN, PAUL A., Engineer, Western Electric Co., New York  
 PALSGROVE, GRANT K., Professor, Rensselaer Polytechnic Institute, Troy  
 TAYLOR, JOHN E., Mechanical Engineer, Locomotive Superheater Co., New York

**North Carolina**

SHERILL, SLOAN S., Mechanical Engineer, Chemical Construction Co., Charlotte

**Ohio**

SACK, EDWIN L., Designer, Parish & Bingham Corp., Cleveland

**SUMMARY**

New Applications.....	122
Change of Grading:	
Promotion from Associate.....	3
Promotion from Associate-Member....	7
Promotion from Junior.....	9
Total.....	140